REMARKS

Claims 1 and 6 are amended. Claims 1-13 remain in the Application. Reconsideration of the pending claims is respectfully requested in view of the above amendment and the following remarks.

I. Claims Rejected Under 35 U.S.C. § 102

Claims 1-10 and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,101,010 issued to Konishi ("Konishi").

To anticipate a claim, the Examiner must show that a single reference teaches each of the elements of that claim. Among other elements, Claim 1 is amended to recite:

> "an optical monitoring signal generator that generates optical monitoring signals having a first wavelength, the first wavelength different from wavelengths of optical signals including data to be transmitted;
>
> ....
>
> a splitter that splits the optical monitoring signals from optical signals output from the optical switch, the split optical monitoring signals having the first wavelength...." (emphasis added).

Applicants submit that Konishi does not teach each of the elements of Claim 1. Independent claim 6 is amended to include similar limitations.

Konishi discloses a technique that uses optical splitters 411-413 to split a portion of the data-carrying optical signals supplied from the matrix switch 3. The split optical signals are then used by the receiver 4 as monitoring signals for fault determination. In Konishi, the monitoring signals are a portion of the data-carrying optical signals and, therefore, have the same wavelengths as the data-carrying optical signals. Konishi does not disclose monitoring signals that have a wavelength different from the wavelengths of the data-carrying optical signals. Thus, Konishi does not teach each of the elements of amended Claims 1 and 6.

In Konishi, with respect to all data optical signals 11a, 11b, . . ., 11n, which are generated by an optical transmission terminal 1, a component is added to a transmission line discriminative frequency in a range of several khz to several hundred khz to transmit the data optical signals 11a, 11b, . . ., 11n, after passing through a switch. Some monitoring optical signals, which are divided from each of the data optical signals 11a, 11b, . . ., 11n, are compared to have a reasonable discriminative frequency component in order to detect a failure in the switch. However, in the present invention, the fault of the optical switch is detected by determining whether the intensity variations including the generation, extinction, etc. (i.e., output power transition), of each of the monitoring signals are in association with the optical switching. Therefore, the present invention is not related to Konishi and is more easily realized as a circuit than Konishi.

A major difference between the claimed invention and Konishi is that the claimed invention detects the fault of the optical switch according to the generation and extinction (i.e., output power transition) of the monitoring signals, whereas Konishi detects the failure in the switch according to the discriminative frequency of the monitoring optical signals. The output power transition is indicated in the graphs shown in FIGS. 2A and 2B. Thus, the present invention is different from Konishi in terms of the detection of the switch fault.

The optical external modulator 21 described in Konishi is an element that receives an optical signal and an O/E conversion signal and converts the intensity or phase of the optical signal according to the shape of the E/O conversion signal. The coupler described in the present invention is an element that receives two optical signals and outputs a signal combining the intensities of the two optical signals. Thus, the optical external modulator 21 and the coupler are completely different from each other. The optical external modulator 21 does not serve as the coupler and vice versa. In this regard, Konishi includes an optical coupler 12 that combines optical signals to be transmitted and the optical external modulator 21 that converts the intensity and phase of the combined optical signal according to the shape of the E/O conversion signal.

Independent Claim 9 similarly recites the use of the output power transition of the split optical signals to determine whether the optical switch malfunctions. Thus, Konishi does not anticipate these claims for analogous reasons mentioned above. Claims 2-5, 7, 8, 10, and 13 depend from Claims 1, 6, and 9, respectively, and incorporate the limitations thereof. Thus, for at least the reasons mentioned above in regard to Claims 1, 6, and 9, Konishi does not anticipate these claims. Accordingly, reconsideration and withdrawal of the §102 rejection of Claims 1-10 and 13 are respectfully requested.

II. Claims Rejected Under 35 U.S.C. § 103(a)

Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Konishi.

Claims 11 and 12 depend from Claim 9 and incorporate the limitations thereof. Thus, for at least the reasons mentioned above in regard to Claim 9, these claims are non-obvious over Konishi.

Accordingly, reconsideration and withdrawal of the §103 rejection of Claims 11 and 12 are requested.

CONCLUSION

In view of the foregoing, it is believed that all claims are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Marilyn Bass

Marilyn Bass April 30, 2007